Gas Monitoring/Inspection Drone

Status: Filled

Group Members: Brandon Khong, Hashim Zubair, Dilraj Gill, Yanming Wu, Alexander Chau

Sponsor(s):

Supervisor(s): Ahmad Rad, PhD, PEng, Professor, Mechatronic Systems Engineering

Project Description

We are given the opportunity by BC Hydro to develop a Gas Monitoring/Inspection Drone. The objective is to ensure no human will be put into the line of fire prior to entering a confined space area to do initial testing where there is a potential gas leak/hazard. In addition, the drone will have the ability to hover and be attached with a light and camera to do inspections, which typically would be dangerous for humans to traverse. For example, high areas which would require a person to climb to inspect, or areas where tripping hazards exist.

This project integrates all aspects of Mechatronics Engineering and will serve as a solution to an existing problem for BC Hydro.

Deliverables
By the end of our capstone (8 months) we aim to provide the following deliverables: 1. A functional prototype drone that successfully monitors gas leaks and transfers the data back to the user. The drone also is capable of performing site inspections prior to sending a person. 2. A program to control the drone that has a user-friendly interface 3. An operating manual that will detail the various functions of the drone and how to use them

Timeline

Month 1: January	Research and congregate drone components, Microcontroller, sensors and decide on a supporting coding language
Month 2: February	Link components together, connecting general input/output connections to the microcontroller
Month 3: March	Implementation of code & logic
Month 4: April	Implementation of code & logic Month 5: May Develop user interface & construct testing Month 6: June Final phase of testing and debugging Month 7: July Final phase of testing and debugging Month 8: August Project documentations and prepare for project demo